

The 2001 Army Small Business Innovation Research (SBIR) Phase II Quality Awards ceremony was held Aug. 21, 2001, at the Pentagon. Dr. Kenneth J. Oscar, Acting Assistant Secretary of the Army for Acquisition, Logistics and Technology, hosted the ceremony. Assisting Oscar with the presentations was Dr. Robert S. Rohde, Deputy Director for Laboratory Management, Office of the Deputy Assistant Secretary of the Army for Research and Technology.

Established in 1994, the Quality Awards Program recognizes SBIR Phase II (research and development (R&D)) efforts that exemplify the SBIR goal of bringing innovative technologies and products to the marketplace. Army SBIR Phase II companies whose projects conclude in a given fiscal year are eligible to compete for that year's quality awards. Award winners are selected based on originality and innovation of research; relevance of the research to the Army and its mission; and commercialization potential of the research, reflecting the primary goal of bringing technology and products to the marketplace.

Quality awards are presented to each winning SBIR company and to its sponsoring Army organization's technical director, technical monitor, SBIR coordinator, and contracting officer.

The dual-use SBIR Program taps into the creativity of the small business community to help meet government R&D objectives. Participating companies develop technologies, products, processes, and services that they can commercialize through sales to private industry or the government. "Our Nation's 25 million small businesses make indispensable contributions to America's economic strength and success. They account for 35 percent of federal contract dollars and provide 55 percent of innovations," stated Oscar. "The men and women of America's small businesses create a wellspring of new technology, new products, and more effective business processes," he added.

2001 ARMY SBIR PHASE II QUALITY AWARDS

Dr. Kenneth A. Bannister
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The Army is transforming to a more responsive, deployable, and sustainable force while maintaining its high levels of lethality, survivability, and versatility. This new force, called the Objective Force (OF), is intended to meet the full spectrum of present and future Army missions. The cornerstone of the OF capability and the transformation is the Future Combat Systems (FCS) Program. This reconfigurable, adaptive "system-of-systems" will provide a common baseline capability that increases the Army's ability to conduct network- and collaboration-centric warfare. The Army is working to develop and demonstrate first-generation FCS and its enabling technologies within this decade. This transformation has had, and will continue to have, a major impact on the Army science and technology community, including the Army SBIR Program. During 2000, the Army SBIR Program was aligned with OF and FCS technology categories, a process that will be ongoing as OF and FCS needs evolve.

During 2001, there were 110 eligible Phase II projects. Through an online nomination system, technical monitors from the sponsoring Army laboratories and centers nominated their respective projects. The Army Research Office-Washington, DC, compiled the 25 top-ranked nominations and forwarded them to the Quality Awards Selection Committee, which is comprised of Army and

industry experts who used an online evaluation system to select the most exceptional Phase II projects. Dr. A. Michael Andrews II, Deputy Assistant Secretary of the Army for Research and Technology, approved five projects for the 2001 awards.

2001 Quality Award Winners

Recipients of the 2001 Army SBIR Phase II Quality Awards and their achievements are as follows:

Ormet Circuits Inc., Carlsbad, CA. As Army weapon and support systems have become increasingly dependent on electronics, susceptibility of electronics to electromagnetic interference (EMI) has become a major readiness issue. Electronic devices have become smaller and faster and are being forced closer and closer together. Consequently, Ormet developed a unique, cost-effective, and state-of-the-art shielding process. ORganic-METallic materials can be screen-printed on bare boards to provide 80 decibels of EMI shielding, or they can be spray-coated over dielectrics on populated boards to provide 30 to 40 decibels of shielding. This enabling technology may be critical to ensuring the survivability of FCS command and control systems.

Accepting the award for Ormet Circuits Inc. was the company's President and Chief Operating Officer Pradeep Gandhi. Also receiving awards for this project were Dr.

Michael J. Lavan, Director of the Advanced Technology Directorate at the U.S. Army Space and Missile Defense Command; Mark D. Brown, Technical Monitor; Dr. Douglas M. Deason, SBIR Coordinator, and Larry G. Ridgeway, Contracting Officer.

TPL Inc., Albuquerque, NM. Newly developed propellants are extremely corrosive and consume gun components at an accelerated rate as ammunition is being developed with higher velocities and lethality. TPL Inc. developed a process to explosively clad thermochemical-resistant refractory metals to the bores of various caliber gun tubes and fabricated two tantalum-clad test barrels from 25mm Bushmaster barrels. Testing demonstrated an increase in barrel life of more than 400 percent. This technology not only dramatically increases barrel service life, but it allows development of new, higher-performance ammunition for greater range and accuracy, with far fewer sustainment requirements, and more lethal rapid-fire weapon systems.

Accepting the award for TPL Inc. was Robert F. Lowey, Senior Engineer and Barrel Armor Program Manager, and Thomas E. Kelly III, Vice President of Marketing. Also receiving awards for this technology were Dr. C.I. (Jim) Chang, Director of the U.S. Army Research Office; Dr. David M. Stepp, Technical Monitor; Dr. Ellen G. Segan, SBIR Coordinator; and Kathryn C. Terry, Contracting Officer.

Lynntech Inc., College Station, TX. Fuel cells offer lighter, more powerful energy sources than those currently available and will extend mission time, reduce weight, and dramatically decrease the logistics burden of present batteries. Monopolar fuel cells represent the simplest possible fuel-cell power supply. With methanol as the fuel, Lynntech Inc. developed cells that are capable of delivering a large amount of electrical energy from an easily handled, pourable liquid fuel. These fuel cells have great potential to serve as small primary energy sources for the Land Warrior Program

and can also power a diverse range of portable electronics for much longer than current battery technology.

Accepting the award for Lynntech Inc. was the company's Electrochemical Energy Conversion Manager Alan Cisar. Also receiving awards for this project were Dr. Robert W. Whalin, Director of the U.S. Army Research Laboratory; Dr. Deryn D. Chu, Technical Monitor; Dean Hudson, SBIR Coordinator; and Lee A. Hess, Contracting Officer.

Remcom Inc., State College, PA. Realistic analyses of radio-wave channels are required to assess communication networks and systems envisioned for FCS. Remcom Inc. developed a software tool that combines site-specific, physics-based radio propagation models for predicting wave characteristics in indoor, urban, and rural environments with a powerful, easy-to-use graphical user interface. The site-specific models accurately predict the negative interactions of radio communication signals with the physical environment, particularly in dense urban areas where strong shadowing and multipath interference effects occur. Using this information, deployed tactical units can build ad hoc and effective wireless communication systems to optimize communications coverage.

Accepting the award for Remcom Inc. was Dr. Raymond J. Luebbers, President, and Joseph W. Schuster, Director of Propagation Software Development. Also receiving awards for this project were Dr. C.I. (Jim) Chang, Director of the U.S. Army Research Office; Dr. James Harvey, Technical Monitor; Dr. Ellen G. Segan, SBIR Coordinator; and Kathryn C. Terry, Contracting Officer.

eMagin Corp., Hopewell Junction, NY. The Army needs dependable microdisplays to provide mounted and dismounted soldiers expanded situational awareness to maintain high levels of lethality, survivability, and versatility for the OF. eMagin developed a high-resolution, active matrix organic, light-emitting diode (OLED) microdisplay for incor-

poration into military helmet-mounted displays. These OLED microdisplays provide high brightness and resolution, a wide temperature operating range, shock resistance, and wide viewing angles, which allow ease of viewing for long periods of time. These microdisplays can be directly interfaced to unattended sensors or to computer videos, providing simple connectivity with low-power consumption.

Accepting the award for eMagin Corp. was Vice President of Microdisplay Product Development Olivier F. Prache. Also receiving awards for this project were Dr. Louis C. Marquet, Director, Research Development and Engineering Center, U.S. Army Communications-Electronics Command; David A. Fellowes, Technical Monitor; Suzanne J. Weeks, SBIR Coordinator; and Ronald W. Backes, Contracting Officer.

Conclusion

The small business community plays a vital role in the readiness and effectiveness of our Armed Forces. Its creativity and innovative spirit will allow tomorrow's warfighters to successfully overcome challenges they may encounter on the battlefield. The SBIR Program fosters innovative thinking and benefits the Army, the private sector, and our national economy.

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